

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

Inventor:	Roger L. Johnston	Art Unit: 3652
Serial No.:	10/080,982	Examiner: Paul T. Chin
Filed:	February 22, 2002	Confirmation No.: 9956
For:	<i>Triangulated Mobile Gantry Crane</i>	
Attorney Docket:	1266.015	Customer No.: 23598

---

**CERTIFICATION UNDER 37 CFR 1.8(a) and 1.10**

I hereby certify that, on the date shown below, this correspondence is being:

**Mailing**

☐ deposited with the US Postal Service in an envelope addressed to Commissioner for Patents, Alexandria, VA 22313-1450

**37 CFR 1.8(a)**

**37 CFR 1.10**

☐ with sufficient postage as first class mail      ☐ As "Express Mail Post Office to Addressee" Mailing Label No.

**Transmission**

☒ Submitted via EFS-web portal

---

Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

**APPEAL BRIEF PURSUANT TO 37 C.F.R. §§1.191 AND 1.192**

Dear Sir:

This Appeal Brief is being filed in furtherance of the Notice of Appeal filed on July 20, 2005. Appellant also filed concurrently herewith a request for oral hearing as authorized under 37 C.F.R. §41.47.

1. **REAL PARTY IN INTEREST**

The real party in interest is J&R Engineering Company, Inc. by virtue of the assignment of the interests of the sole inventor, Mr. Roger L. Johnson, thereto. This assignment has been duly recorded with the Office on April 3, 2002 at reel/frame 012786/0255.

2. **RELATED APPEALS AND INTERFERENCES**

Appellant is unaware of any other appeals or interferences related to this Appeal.

3. **STATUS OF THE CLAIMS**

Claims 1–23 are currently pending. Claims 1–23 each stand twice rejected in view of the Office Action dated April 20, 2007 and are therefore the subject of this appeal. No claims have been withdrawn or cancelled.

4. **STATUS OF AMENDMENTS**

This appeal relates to the rejections to the claims and Specification as amended in the Response filed July 19, 2007 and the amendment filed on concurrent date herewith. The Amendment filed on the same date of this Appeal Brief amends claim 20 to resolve a 35 U.S.C. §112, second paragraph antecedent basis rejection of claim 20. The subject matter of this amendment was communicated via telephone to the Examiner on October 3, 2007. The Examiner responded with a voice mail message on October 4, 2007 and indicated that amending claim 20 to recite “gantry crane” rather than “vehicle” would overcome the antecedent basis issue rejection with respect to this claim. Accordingly, as the Examiner has acknowledged that this amendment would remove an issue from appeal and as the amendment is filed in response to a Non-Final Office Action, entry of this amendment as a matter of right is authorized under both 37 C.F.R. §1.112 and/or 37

C.F.R. §1.116. Even though entry of this amendment has been orally confirmed by the Examiner, for the Panels convenience, claim 20, as presented herein, includes this amendment and is herein identified with the parenthetical clause “Currently Amended”.

5. **SUMMARY OF CLAIMED SUBJECT MATTER**

The present application calls for, in claim 1, a triangulated mobile gantry crane (20) that includes first, second, and third booms, (22, 24, 26) each of which has a vertical axis and comprises 1) a mobile base (50) that is independently supported on the ground and that is rotatable about the vertical axis to steer the crane (20) and 2) a lift leg (52, 52a) that is extendible about the vertical axis, that is supported on said base (50), and that has an upper end. App. Pub No. 2003/016708 ¶¶[0029]-[0032]; Figs. 1-3. The first boom (22) is positioned laterally between and longitudinally remote from said second and third (24, 26) booms, wherein first, second, and third horizontal lines interconnecting said first, second, and third booms (22, 24, 26) form an acute triangle. Id., ¶[0030]; Figs. 1-3.

The gantry crane (20) of claim 1 includes a plurality of horizontal beams (28, 30, 32) that functionally interconnect said lift legs (52, 52a) and that are raisable with coordinated lifting of said first, second, and third booms (22, 24, 26) to lift a load from the ground. Id., ¶[0039]; Figs. 1-3. Claim 1 further defines that at least one of the beams (28, 30, 32) is linearly extendible to increase the horizontal spacing between two of said booms (22, 24, 26). Id., ¶[0040]; Fig. 3.

Claim 1 further includes rigging that extends downwardly from the beams (28, 30, 32) and that is detachably coupleable to the load after the gantry crane (20) is transported to a position in which at least one of the beams (28, 30, 32) is located over the load, the rigging lifting the load from the ground upon subsequent extension of said booms (22, 24,

26) and that then being releasable from the load upon subsequent retraction of the said booms (22, 24, 26). Id., ¶¶[0045]-[0047].

Another aspect of the claimed invention, as reflected in claim 2, further defines a gantry (20) that includes first, second, and third booms (22, 24, 26) which each have a vertical axis. Id., ¶[0029], Figs. 1-3. Gantry (20) is further defined as comprising 1) a mobile base (50, 50a) that is independently supported on the ground and that is rotatable about the vertical axis to steer the crane (20), and 2) a lift leg (52, 52a) that is supported on said base (50, 50a), that is extendible along the vertical axis, and that has an upper end, said first boom (22) being positioned laterally between and longitudinally remote from said second and third booms (24, 26). Id., ¶¶[0034], [0036]; Figs. 1-6.

Claim 2 further defines that gantry (20) includes a plurality of horizontal beams (28, 30, 32) that functionally interconnect said lift legs (52, 52a) and that are raisable with coordinated lifting of said first, second, and third booms (22, 24, 26) to lift a load from the ground. Id., ¶[0045]. At least one of the beams (28, 30, 32) is linearly extendible to increase the horizontal spacing between two of said booms (22, 24, 26) and wherein said beams (28, 30, 32) include first, second, and third beams functionally interconnecting said upper ends of said lift legs (52, 52a) to form an at least essentially triangular shape when viewed in top plan. Id., ¶¶[0039]-[0040]; Figs. 1-3.

Claim 2 further requires gantry (20) be operable with rigging that extends downwardly from the beams (28, 30, 32) and that is detachably coupleable to a load after the gantry crane (20) is transported to a position in which at least one of the beams (28, 30, 32) is located over the load. Id., ¶¶[0045]-[0047]. It is further disclosed that the rigging lifts the load from the ground upon subsequent extension of said booms (22, 24,

26) and is then releasable from the load upon subsequent retraction of the said booms (22, 24, 26). Id.

Claim 3 defines a further aspect of the claimed invention as including a triangulated mobile gantry crane (20) that has first, second, and third booms (22, 24, 26). Id. Each boom (22, 24, 26) is further defined as having a vertical axis and comprising 1) a mobile base (50, 50a) that is independently supported on the ground and that is rotatable about the vertical axis to steer the crane (20) and 2) a vertically extendible lift leg (52, 52a) that is supported on said base (50, 50a) that is extendible along the vertical axis and has an upper end. Id., ¶¶[0034], [0036]; Figs. 1-6. The first boom (22) is further defined as being positioned laterally between and longitudinally remote from the second and third booms (24, 26). Id.

Gantry (20) of claim 3 includes a plurality of horizontal beams (28, 30, 32) that functionally interconnect said lift legs (52, 52a). Id., ¶¶[0039]-[0040]; Figs. 1-3. Beams (28, 30, 32) are further defined as including first (28), second (30), and third beams (32) functionally interconnecting said upper ends of said lift legs (52, 52a) to form an at least essentially triangular shape when viewed in top plan. Id. First and second beams (28, 30) are further defined as extendible to increase the spacing between said first and second booms (22, 24) and said first and third booms (22, 26), respectively. Id., ¶[0041]; Fig. 2.

The gantry (20) claim 3 includes rigging that extends downwardly from the beams (28, 30, 32) and that is detachably coupleable to a load after the gantry crane (20) is transported to a position in which at least one of the beams (28, 30, 32) is located over the load. Id., ¶¶[0045]-[0047]. It is further disclosed that the rigging lifts the load from the

ground upon subsequent extension of said booms (22, 24, 26) and is then releasable from the load upon subsequent retraction of the said booms (22, 24, 26). Id.

Claim 7 defines another aspect of the claimed invention that includes a mobile gantry crane (20) that has first, second, and third booms (22, 24, 26). Id., ¶[0029]; Figs. 1-3. Each boom (22, 24, 26) is further defined as being oriented about a vertical axis and including 1) a mobile base (50, 50a) that is independently supported on the ground and that is rotatable about the vertical axis to steer the crane (20) and 2) a lift leg (52, 52a) that is supported on said base (50, 50a) that is extendible along the vertical axis, and that has an upper end. Id., ¶¶[0034], [0036]; Figs. 1-6. The first boom (22) is further described as being positioned laterally between and longitudinally remote from said second and third booms (24, 26) of mobile gantry crane (20). Id.

Claim 7 further defines that gantry (20) includes a plurality of horizontal beams (28, 30, 32) that functionally interconnect said lift legs (52, 52a) and that are raisable with coordinated lifting of said first, second, and third booms (22, 24, 26) to lift a load from the ground. Id., ¶[0045]. At least one of the beams (28, 30, 32) is linearly extendible to increase the horizontal spacing between two of said booms (22, 24, 26) and wherein said beams (28, 30, 32) include first, second, and third beams functionally interconnecting said upper ends of said lift legs (52, 52a) to form an at least essentially triangular shape when viewed in top plan. Id., ¶¶[0039]-[0040]; Figs. 1-3.

Claim 7 further requires gantry (20) be operable with rigging that extends downwardly from the beams (28, 30, 32) and that is detachably coupleable to a load after the gantry crane (20) is transported to a position in which at least one of the beams (28, 30, 32) is located over the load. Id., ¶¶[0045]-[0047]. It is further disclosed that the

rigging lifts the load from the ground upon subsequent extension of said booms (22, 24, 26) and is then releasable from the load upon subsequent retraction of the said booms (22, 24, 26). Id.

Claim 13 defines a further aspect of the claimed invention as including a triangulated mobile gantry crane (20) that has first, second, and third booms (22, 24, 26), each of which extends along a vertical axis and comprises 1) a mobile base (50, 50a) that is independently supported on the ground and 2) a vertically extendible lift leg (52, 52a) that is supported on said base (50, 50a) and that is extendible along the vertical axis, and that has an upper end. Id., ¶¶[0034], [0036]; Figs. 1-6. The mobile base (50, 50a) is further defined as being rotatable about the vertical axis of the respective boom (22, 24, 26) through an angle of at least 360° with respect to said lift leg (52, 52a) to steer said gantry crane (20). Id., ¶¶[0036]-[0037]; Figs. 1-6.

Claim 13 further defines the first boom (22) as a front boom positioned at a lateral centerline of said gantry crane (20). Id., ¶[0038]; Fig. 2. The second and third booms (24, 26) are further defined as rear booms positioned on opposite sides of said lateral centerline. Id., ¶[0032]; Figs. 2-3. Claim 13 further defines the geometric association of booms (22, 24, 26) via first, second, and third horizontal lines that interconnect the first, second, and third booms (22, 24, 26) in the form of an acute triangle. Id., ¶¶[0029]-[0032]; Figs. 2-3.

Claim 13 further recites first and second lift beams (28, 30) that functionally interconnect the lift legs (52, 52a) of said first and second booms (22, 24) and said first and third booms (22, 26), respectively. Id., Figs. 2-3. This aspect of the invention further recites a rear cross beam (32) functionally interconnecting the lift legs (52, 52a) of the

second and third booms (22, 26) to one another and wherein the first and second lift beams (28, 30) are raisable with coordinated lifting of said first, second, and third booms (22, 24, 26) to lift a load. Id., ¶¶[0045]-[0047], Figs. 2-3. At least one of the beams (28, 30, 32) is further defined as being linearly extendible to increase the horizontal spacing between two of said booms (28, 30, 32). Id., ¶[0043], Figs. 2-3.

Claim 13 further recites rigging that extends downwardly from the beams (28, 30, 32) and that is detachably coupleable to a load after the gantry crane (20) is transported to a position in which at least one of the beams (28, 30, 32) is located over the load. Id., ¶¶[0045]-[0047]. It is further disclosed that the rigging lifts the load from the ground upon subsequent extension of said booms (22, 24, 26) and is then releasable from the load upon subsequent retraction of the said booms (22, 24, 26). Id.

Claim 14 recites another aspect of the claimed invention. As called for therein, this aspect of the claimed invention includes a triangulated mobile gantry crane (20) that has first, second, and third booms (22, 24, 26), each of which extends along a vertical axis and comprises 1) a mobile base (50, 50a) that is independently supported on the ground and 2) a vertically extendible lift leg (52, 52a) that is supported on said base (50, 50a) and that is extendible along the vertical axis, and that has an upper end. Id., ¶¶[0034], [0036]; Figs. 1-6. The mobile base (50, 50a) is further defined as being rotatable about the vertical axis of the respective boom (22, 24, 26) through an angle of at least 360° with respect to said lift leg (52, 52a) to steer said gantry crane (20). Id., ¶¶[0036]-[0037]; Figs. 1-6.

Claim 14 further defines the first boom (22) as a front boom positioned at a lateral centerline of said gantry crane (20). Id., ¶[0038]; Fig. 2. The second and third booms



(24, 26) are further defined as rear booms positioned on opposite sides of said lateral centerline. Id., ¶[0032]; Figs. 2-3. Claim 14 further defines the geometric association of booms (22, 24, 26) via first, second, and third horizontal lines that interconnect the first, second, and third booms (22, 24, 26) forming an acute triangle. Id., ¶[0029]-[0032]; Figs. 2-3.

Claim 14 further recites first and second horizontal lift beams (28, 30) that functionally interconnect the lift legs (52, 52a) of said first and third booms (22, 26) and said second and third booms (24, 26), respectively. Id., Figs. 2-3. Claim 14 calls for a rear horizontal cross beam (32) functionally interconnecting the lift legs (52, 52a) of the second and third booms (22, 26) to one another and wherein the first and second lift beams (28, 30) are extendible to increase the spacing between the first and second booms (22, 26) and the second and third booms (24, 26), respectively. Id., ¶[0045]-[0047], Figs. 2-3.

Claim 14 of present invention further recites that the first and second lift beams (28, 30) further comprise a single inner tube (54, 54a) positioned at least generally centrally of said beam (28, 30) and a first outer tube (56, 56a) extending from said inner tube (54, 54a) to the lift leg (52, 52a) of said first boom (22). Id., ¶[0034]-[0035]; Figs. 1 and 4. A second outer tube extends from said inner tube (54, 54a) to the lift leg (52, 52a) of the associated one of said second and third booms (24, 26) such that each of said outer tubes (56a) being extendible and retractable relative to said inner tube (54, 54a). Id.

Claim 14 further recites rigging that extends downwardly from the beams (28, 30, 32) and that is detachably coupleable to a load after the gantry crane (20) is transported to a position in which at least one of the beams (28, 30, 32) is located over the load. Id.,

¶¶[0045]-[0047]. It is further called for that the rigging lifts the load from the ground upon subsequent extension of said booms (22, 24, 26) and is then releasable from the load upon subsequent retraction of the said booms (22, 24, 26). Id.

Claim 16 of the present invention defines a includes a triangulated mobile gantry crane (20) that has first, second, and third booms (22, 24, 26), each of which extends along a vertical axis and comprises 1) a mobile base (50, 50a) that is independently supported on the ground and 2) a vertically extendible lift leg (52, 52a) that is supported on said base (50, 50a) and that is extendible along the vertical axis, and that has an upper end. Id., ¶¶[0034], [0036]; Figs. 1-6. The mobile base (50, 50a) is further defined as being rotatable about the vertical axis of the respective boom (22, 24, 26) through an angle of at least 360° with respect to said lift leg (52, 52a) to steer said gantry crane (20). Id., ¶¶[0036]-[0037]; Figs. 1-6.

Claim 16 further defines the first boom (22) as a front boom positioned at a lateral centerline of said gantry crane (20). Id., ¶[0038]; Fig. 2. The second and third booms (24, 26) are further defined as rear booms positioned on opposite sides of said lateral centerline. Id., ¶[0032]; Figs. 2-3. Claim 16 further defines the geometric association of booms (22, 24, 26) via first, second, and third horizontal lines that interconnect the first, second, and third booms (22, 24, 26) forming an acute triangle. Id., ¶¶[0029]-[0032]; Figs. 2-3.

Claim 16 further recites first and second horizontal lift beams (28, 30) that functionally interconnect the lift legs (52, 52a) of said first and third booms (22, 26) and said second and third booms (24, 26), respectively. Id., Figs. 2-3. Claim 16 calls for a rear horizontal cross beam (32) functionally interconnecting the lift legs (52, 52a) of the

second and third booms (22, 26) to one another and wherein the rear cross beam includes a hydraulic cylinder (114) extending between first and second lift beams (28, 30) and operatively connectable to each of the first and second lift beams at multiple discrete mounting locations (110a, 110b, 110c). Id., ¶¶[0041]-[0043], Figs. 2-3.

Claim 16 further recites rigging that extends downwardly from the beams (28, 30, 32) and that is detachably coupleable to a load after the gantry crane (20) is transported to a position in which at least one of the beams (28, 30, 32) is located over the load. Id., ¶¶[0045]-[0047]. It is further called for that the rigging lifts the load from the ground upon subsequent extension of said booms (22, 24, 26) and is then releasable from the load upon subsequent retraction of the said booms (22, 24, 26). Id.

Claim 17 defines a method that includes moving a mobile triangulated gantry crane (20) over a load by straddling said load with an open front end of said gantry crane (20) and positioning said load longitudinally between said open front end and a closed rear end. Id., ¶¶[0029], [0030], [0045]. Said rear end of said gantry crane (20) is further defined as comprising a first boom (22) positioned laterally between and longitudinally remote from second and third booms (24, 26). Id. Each boom (22, 24, 26) is further defined as extending along a respective vertical axis, wherein first, second, and third horizontal lines interconnecting said first, second, and third booms (22, 24, 26) form an acute triangle. Id., ¶[0030]; Figs. 1-3.

The method of claim 17 includes, after moving of gantry crane (20) coupling at least one of first, second, and third horizontal beams (28, 30, 32) to said load, said first, second, and third horizontal beams (28, 30, 32) functionally interconnecting said first, second, and third booms (22, 24, 26) to one another. Id., ¶¶[0029], [0030], [0045]. The

method includes then extending said first, second, and third booms (22, 24, 26) along the respective vertical axes in a coordinated manner to raise said first, second, and third horizontal beams (28, 30, 32) and to lift said load. Id. Claim 17 includes linearly horizontally extending at least one of said beams (28, 30, 32) to increase the horizontal spacing between two of the booms (22, 24, 26). Id., ¶[0010].

Claim 18 of invention defines a method that includes moving a mobile triangulated gantry crane (20) over a load by straddling said load with an open front end of said gantry crane (20) and positioning said load longitudinally between said open front end and a closed rear end. Id., ¶¶[0029], [0030], [0045]. Said rear end of said gantry crane (20) is further defined as comprising a first boom (22) positioned laterally between and longitudinally remote from second and third booms (24, 26). Id. Each boom (22, 24, 26) is further defined as extending along a respective vertical axis, wherein first, second, and third horizontal lines interconnecting said first, second, and third booms (22, 24, 26) form an acute triangle. Id., ¶[0030]; Figs. 1-3.

The method of claim 18 includes, after moving of gantry crane (20), coupling at least one of first, second, and third horizontal beams (28, 30, 32) to said load, said first, second, and third horizontal beams (28, 30, 32) functionally interconnecting said first, second, and third booms (22, 24, 26) to one another. Id., ¶¶[0029], [0030], [0045]. The method includes then extending said first, second, and third booms (22, 24, 26) along the respective vertical axes to lift said load. Id. Claim 18 includes extending the third beam (32) prior to the moving step to increase the spacing between the second and third booms (24, 26) sufficiently to permit a rear end of said gantry crane (2) to straddle said load. Id., ¶[0010].

Claim 21 of the invention calls for a triangulated mobile gantry crane (20) having boom assembly consisting of first, second, and third horizontally spaced booms (22, 24, 26), each of which extends along a vertical axis and comprises 1) a mobile base (50) that is independently supported on the ground and 2) a lift leg (52, 52a) that is supported on said base (50), that is extendible along the vertical axis, and that has an upper end. *Id.*, ¶¶[0029]-[0032]; Figs. 1-3. Claim 21 further defines first boom (22) as being positioned laterally between and longitudinally remote from said second and third booms (24, 26). *Id.*, ¶[0030]; Figs. 1-3.

Claim 21 further recites a plurality of horizontal beams (28, 30, 32) that functionally interconnect said lift legs (52, 52a) and that are raisable with coordinated lifting of said first, second, and third booms (22, 24, 26) to lift a load, and wherein at least one of the beams (28, 30, 32) is linearly extendible to increase the horizontal spacing between two of said booms (22, 24, 26). *Id.*, ¶¶[0039]-[0040]; Figs. 1-3.

Claim 21 further calls for rigging that extends downwardly from the beams (28, 30, 32) and that is detachably coupleable to a load after the gantry crane (20) is transported to a position in which at least one of the beams (28, 30, 32) is located over the load, the rigging lifting the load from the ground upon subsequent extension of said booms (22, 24, 26) and that then being releasable from the load upon subsequent retraction of the said booms (22, 24, 26). *Id.*, ¶¶[0045]-[0047].

## 6. **GROUNDS OF REJECTION:**

The Examiner has at various times during the prosecution of this matter rescinded acknowledgements as to the allowability of various claims of the above-captioned matter. See October 6, 2003 Office Action; October 20, 2004, Office Action;

May 23, 2006 Interview Summary. Although Appellant acknowledges the authority of the Office to perform a complete and comprehensive examination, rather than continuing to work toward non-binding agreements with the Examiner, Appellant requests the Panels consideration of the remarks presented herein and favorable action over the outstanding rejections.

In the Office Action of April 20, 2007, the Examiner set forth various grounds of rejection of the pending claims. Appellant contests each grounds of rejection presented by the Examiner.

The Examiner rejected claims 1-23 under 35 U.S.C. §112, second paragraph, as being indefinite for failing to particularly point out and distinctly claims the subject matter Applicant regards as the invention. April 20, 2007 Office Action, pg. 2, ¶3.

The Examiner next rejected claims 1-4, 7, 9-11, 17-19, and 21-23 under 35 U.S.C. §103(a) as being unpatentable over Soviet Union Patent (SU 887434, hereinafter SU '434), in view of France Patent (FR 2,597,460; hereinafter FR '460), and further in view of either of France Patent (2,420,502, hereinafter FR '502) or Gonzales (U.S. Patent 3,831,791, hereinafter Gonzales). Id., pg. 3, ¶5.

The Examiner rejected dependent claim 5 under 35 U.S.C. §103(a) as being unpatentable over SU '434 in view of FR '460 in view of either of FR '502 or Gonzales, and further in view of Brower (U.S. Patent 4,897,791, hereinafter Brower). Id., pg. 4, ¶6.

The Examiner also rejected claims 6 and 8 under 35 U.S.C. §103(a) as being unpatentable over SU '434 in view of FR '460 in view of either of FR '502 or Gonzales and further in view of Brower and Tana et al. (U.S. Patent 4,973,094, hereinafter Tana et al.). Id., pg. 6, ¶7.

The Examiner next rejected claims 12, 13, 16, and 20 under 35 U.S.C. §103(a) as being unpatentable over SU '434 in view of FR '460 in view of either of FR '502 or Gonzales and further in view of Rulison (U.S. Patent 4,749,324, hereinafter Rulison). Id., pg. 6, ¶8.

Claim 14 stands rejected under 35 U.S.C. §103(a) as being unpatentable over SU '434 in view of FR '460 in view of either of FR '502 or Gonzales and further in view of Brower and Rulison. Id., pg. 7, ¶9.

The Examiner next rejected claim 15 under 35 U.S.C. §103(a) as being unpatentable over SU '434 in view of FR '460 in view of either of FR '502 or Gonzales and further in view of Brower, Rulison, and Tana et al. Id., pg. 8, ¶10. This rejection posits that it would have been obvious to a person of ordinary skill in that art to combine the disclosures of two series of six references to yield the claimed invention.

Of the above-rejections, Appellant believes the Examiner has failed to establish a *prima facie* showing of obviousness with respect to the pending independent claims. Additionally, Appellant believes that several of the dependant claims are patentably distinct over the art of record independent of the chain of dependency. Accordingly, the subjects of this appeal are the Examiner's rejection of claims 1-23 under 35 U.S.C. §112, second paragraph and the prior art rejections of independent claims 1, 2, 3, 7, 13, 14, 16, 16, 18, and 21. As mentioned above, although all of the dependent claims are believed to be patentably distinct over the art of record as depending from an otherwise allowable claim, Appellant believes at least dependent claims 4, 5, 6, and 9 recite independently patentable features of the present invention. Accordingly, it is the various rejections of

claims 1-23 that are the subject matter of this appeal as Appellant contests each of these rejections. No claims have been cancelled or withdrawn.

7. **ARGUMENT:**

A. **35 U.S.C. §112 rejections of claims 1-23**

i. **Rejection of claims 1, 13, 14, and 16-18 under 35 U.S.C. §112, second paragraph**

The Examiner rejected all of the pending claims under 35 U.S.C. §112, second paragraph as vague and indefinite. The Examiner rejected claims 1, 13, 14, and 16-18 stating that the recitation of “first, second, and third horizontal lines interconnecting said first, second, and third booms form an acute triangle” is vague and indefinite. Id., pg. 2, ¶3. Appellant finds it curious that such an allegation is presented for the first time in an Office Action dated April 20, 2007 considering the amendment presenting this language was filed in the paper of January 18, 2005. Such action is merely indicative of the piecemeal and inconsistent prosecution this matter has received. The Examiner failed to mention or even allude to such a rejection during the in-person interview of May 23, 2006 with the undersigned. Even so, as Appellant believes the pending claims clearly and distinctly define the present invention, Appellant requests favorable action over this rejection. The Examiner’s rejection is simply unsupportable.

The Examiner maintains that “only the first, second, and third booms are interconnected to form an acute triangle, but the lines, which are not clearly defined, could not be interconnected.” April 20, 2007 Office Action, pg. 2, ¶3. Such an assertion is wholly meritless. That is, one of ordinary skill in the art would readily appreciate that the recitation of the horizontal lines in claims 1, 13, 14, and 16-18 describes 1) the



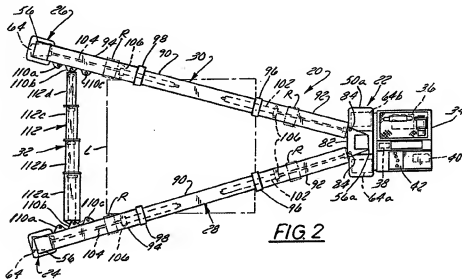
orientation of the booms relative to a number of horizontal lines and 2) the orientation of the booms relative to one another.

MPEP §2173.02 states that “[t]he essential inquiry pertaining to this requirement is whether the claims set out and circumscribe a particular subject matter with a reasonable degree of clarity and particularity” and further that the “[d]efiniteness of claim language must be analyzed, not in a vacuum, but in light of: (A) the content of the particular application disclosure; (B) the teachings of the prior art; and (C) the claim interpretation that would be given by one possessing the ordinary level of skill in the pertinent art at the time the invention was made.” MPEP §2173.02.

MPEP §2171 sets forth two requirements for satisfying 35 U.S.C. §112, second paragraph. The first requirement is that the claims must set forth the subject matter that applicant regards as his invention and the second requirement is that the claims must particularly point out and distinctly define the metes and bounds of the subject matter that will be protected by the patent grant. MPEP §2171. MPEP §2171 further states that “the second requirement is an objective one because it is not dependent on the views of applicant or any particular individual, but is evaluated in the context of whether the claim is definite – i.e., whether the scope of the claim is clear to a hypothetical person possessing the ordinary level of skill in the pertinent art.” MPEP §2171, (emphasis added).

In the context of claims 1, 13, 14, and 16-18, the claims define the orientation of the booms through the use of first, second, and third horizontal lines that interconnect the first, second, and third booms and form an acute triangle. As shown in Fig. 2 of the Application as reproduced below, when viewed in a top plan view, a series of three lines

oriented in a horizontal plane such that each line passes through or interconnects two of booms 22, 24, 26, defines the orientation of the lines, and therefore the orientation of the booms in space, to form an acute triangle.



Understandably, although there are other ways of stating this limitation. However, the fact remains that the limitation is clear and definite in as much as the limitation explicitly recites the relative position of the booms via the geometric association of first, second, and third lines to form an acute triangle. Appellant finds the Examiner's assertion that "only the first, second, and third booms are interconnected to form an acute triangle, but the lines, which are not clearly defined, could not be interconnected" is an attempt to create ambiguity where none exists. Id. That is, the Examiner's articulation of the rejection clearly recites the underlying understanding of the limitation, i.e. to define the geometric orientation of the booms as forming an acute triangle. Appellant's definition of the interconnected booms via lines that extend therebetween clearly and distinctly defines the limitations of the claims. Accordingly,

Appellant respectfully requests favorable action over the rejection under 35 U.S.C. §112, second paragraph of claims 1, 13, 14, and 16-18, and the claims that depend therefrom.

**ii. Rejection of claims 1-3, 7, 13, 14, 16, and 21 under 35 U.S.C.**

**§112, second paragraph**

The Examiner also rejected claims 1-3, 7, 13, 14, 16, and 21 under 35 U.S.C. §112, second paragraph as reciting rigging and alleging that “it is not clearly understood that applicant is claiming ‘a method of loading a load on the gantry and unloading the load from’ in combination with the device or is merely reciting ‘functional limitations’.” Id. The Examiner’s articulation of this rejection clearly reflects the impropriety of the rejection and the flaws in the Examiner’s reasoning. That is, regardless of whether the limitations are portions of the device or functional recitations relative thereto, the claims clearly and definitely recite a number of features and clearly and definitely associate those features. The Examiner’s confusion that Appellant may be “merely reciting ‘functional limitations’” evidences the Examiner’s willingness to disregard claim features, in direct contradiction to the requirements of MPEP §2173.05(g). As stated therein, “A functional limitation must be evaluated and considered, just like any other limitation of the claim, for what it fairly conveys to a person of ordinary skill in the pertinent art in the context in which it is used.” MPEP §2173.05(g). That is, there is no differentiation in claim interpretation afforded a part as compared to a function as asserted by the Examiner.

Claim 1 calls for, in part, rigging that extends downwardly from the beams and that is detachably coupleable to the load after the gantry crane is transported to a position in which at least one of the beams is located over the load, the rigging lifting the load

from the ground upon subsequent extension of said booms and that then being releasable from the load upon subsequent retraction of the said booms. This limitation is similarly recited in claims 2, 3, 7, 13, 14, 16, and 21. The limitation is clear and concise in both the parts involved and the operation thereof.

The limitation differentiates the claimed gantry crane from other lifting assemblies is detailing that rigging can be positioned after lift beams are located over the load. The limitation differentiates the claimed gantry crane from other lifting devices in calling for the lifting and lowering of a load via rigging and extension/retraction of booms. Such integration of parts and their operation does not render the claim indefinite. As stated in MPEP §2173.05(g), “A functional limitation is often used in association with an element, ingredient, or step of a process to define a particular capability or purpose that is served by the recited element, ingredient or step.” *Id.* Appellant has merely done what is expressly authorized by the rules and the law. As the limitation complained of by the Examiner clearly and distinctly recites a number of features and the interaction and operation of those features, Appellant believes that claims 1, 2, 3, 7, 13, 14, 16, and 21 are clear and unambiguous. Accordingly, Appellant requests favorable action over the rejection under 35 U.S.C. §112, second paragraph of claims 1, 2, 3, 7, 13, 14, 16, and 21, and the claims that depend therefrom.

**iii. Rejection of claim 20 under 35 U.S.C. §112, second paragraph**

The Examiner also rejected claim 20 as lacking antecedent basis for the recitation of the limitation “said vehicle.” As mentioned above, the Examiner responded via a voice-mail left with the office of the undersigned on October 4, 2007. In this voice-mail message, the Examiner indicated that amending claim 20 to replace “said vehicle” with

“said gantry crane” would overcome this rejection. Accordingly, in a paper filed on even date herewith, Appellant has amended claim 20 as suggested by the Examiner to overcome this rejection and remove this issue from appeal.

#### **B. Prior Art Rejections**

As recently stated by the Supreme Court in *KSR Intern. Co. v. Teleflex Inc.*, 127 S. Ct. 1727, (2007), and reiterated by the CAFC in *Leapfrog v. Fisher-Price* (Fed. Cir. 2007), although the *Graham* factual inquiries are still relevant, common sense must apply when performing an obviousness analysis. *KSR Intern. Co. v. Teleflex Inc.*, 127 S. Ct. 1727, (2007). Here, common sense dictates that it would not have been obvious for a person of ordinary skill in the art, having available to them the multiple references applied by the Examiner, to yield the claimed invention therefrom.

Contrary to the Examiner’s position, a patent composed of several elements is not proved obvious merely by demonstrating that each of its elements was, independently, known in the prior art. *KSR Intern. Co. v. Teleflex Inc.*, 82 USPQ2d at 1396. It can be important to identify a reason that would have prompted a person of ordinary skill in the relevant field to combine the elements in the way the claimed new invention does. *Id.* Furthermore, although the Court admonished the rigid application of the teaching, suggestion, motivation, test (hereinafter the TSM test) as articulated in MPEP §2143, the Court further states that “the TSM test captures a helpful insight [in asserting that] a patent composed of several elements is not proved obvious merely by demonstrating that each element was, independently, known in the prior art.” *Id.* at 1731. The Court further states that “There is no necessary inconsistency between the test and the *Graham* analysis.” *Id.* at 1732.

Therefore, in accordance with the guidance provided in KSR, cases citing thereto, the Laws, Rules, and Regulations as set forth in 35 U.S.C., 37 C.F.R., and the MPEP, respectively, to establish a *prima facie* obviousness rejection, the references, or references when combined, must at least include each and every element as called for in claims or a common sense variant thereof and a common sense appreciation by one of ordinary skill in the art to combine the references in the manner suggested by the Examiner absent Applicant's own teaching. See KSR Intern. Co. v. Teleflex Inc., 127 S. Ct. 1727, (2007), MPEP §§2141, 2143, 2145. For the reasons set forth below, Appellant believes that the obviousness rejections of the pending claims are improper and unsupported. Accordingly, Appellant respectfully requests favorable action over all of the outstanding prior art rejections.

Each of the pending claims unequivocally recites a "triangulated" gantry, i.e., one having a triangular footprint. The gantry includes first, second, and third booms, horizontal beams functionally interconnecting the booms, and riggings that extend downwardly from the beams. Depending upon the claim at issue, at least one of the beams is linearly extendible to increase the horizontal spacing between two of the booms. Some of the claims additionally require that more of the beams be extendible. Each of the claims further requires that each boom include a lift leg that is extendible about a *vertical axis* and a base that is rotatable about the vertical axis to steer the crane. *This combination of steerability and boom extendibility and retractability is not believed to be disclosed, suggested, or taught in the art of record.* At least for the following reasons, Appellant believes claims 1-23 patentably define the present invention over the art of record.

**i. CLAIM 1**

The Examiner rejected claim 1 under 35 U.S.C. §103(a) as being unpatentable over SU '434, in view of FR '460, and further in view of either of FR '502 or Gonzales. April 20, 2007 Office Action, pg. 3, ¶5. Appellant respectfully disagrees.

Claim 1 calls for, in part, a triangulated mobile gantry crane that includes first, second and third booms. Each boom has a vertical axis and includes a mobile base that is independently supported on the ground and that is rotatable about the vertical axis to steer the crane. Each boom is further defined to include a lift leg that is extendable about the vertical axis.

In rejecting claims 1, 2, 3, 17, and 18 the Examiner asserts that "Soviet Union Patent (SU 887434) discloses a triangular mobile gantry crane and method to lift a load, comprising first (4), second (3), and third booms (6), each of which having [sic] a mobile base that is independently support [sic] on the ground and a vertically [sic] lift leg (Fig. 2) supported on the base." April 20, 2007 Office Action, pg. 3, ¶5. The Examiner's interpretation of that which is disclosed in SU '434 is simply beyond a reasonable and common sense interpretation of the assembly shown therein. Specifically, contrary to the Examiner's assertions, SU '434 does *not* disclose a *triangulated gantry*. It instead discloses a *four legged gantry* in which two of the legs (3) are parallel and two of the legs on the opposite side of the gantry extend at an acute angle.

Claim 1, like each of the independent claims, recites that a lift leg of each of the booms extends along a vertical axis. One of ordinary skill in the art would appreciate that legs 3, 4, and 6 of SU '434 are not extendable, nor is each leg independently supported on the ground as called for in claim 1. Furthermore, one of ordinary skill in

the art will readily appreciate that, because the gantry crane of SU '434 is constructed to be operated upon rails 11, 13, i.e., there would be no reason to include independently steerable gantry legs for a gantry crane configured to operate on rails. That is, the supports are intended to follow the rails and, as such, would enjoy no benefit if they were independently steerable relative thereto.

SU '434 further includes a crane 2 that is affixed to one of the horizontal members of the gantry crane. One of ordinary skill in the art would readily appreciate that triangulating vertical support legs 3, 4, and 6 upon a gantry crane having a crane unit 2 that is offset from a center of the gantry crane would yield off-center loading of the gantry relative to the support legs. That is, one of ordinary skill in the art would readily appreciate that the modifications to the system of SU '434 suggested by the Examiner would render the gantry crane disclosed therein unsuitable for its intended purpose. Specifically, the proposed modification would result in "offset loading" of the crane in which the center of gravity of the load is spaced apart or offset from the center of gravity of the crane. This offset load generates a very dangerous tipping torque on the crane that crane designers avoid at all cost. Accordingly, one of ordinary skill in the art, recognizing that the proposed combination would have rendered the system of SU '434 at least partially inoperative for its intended purpose, would have been disincentivised to make the proposed combination. The rejections are untenable for this reason alone. See MPEP § 2143.01(V) and *In re Gordon*, 733 F.2d 900, 221 USPQ 1125 (Fed. Cir. 1984).

The Examiner acknowledges that "Soviet Union Patent (SU 887434)... does not clearly show the first boom having a vertical axis comprising a mobile base that is rotatable on the vertical axis to steer the gantry and a lift leg that is extendable about the



vertical axis[.] [h]owever, the France Patent (FR 2597460) teaches a first boom 33 having a vertical axis comprising a mobile base (34, 35) (see Figs. 4-8) that is rotatable in the vertical axis and a lift leg (33) that is extendible about the vertical axis to steer the gantry wherein the first boom (33) is controlled by an operator (25) (see Figs. 1 and 3).” Id., pg. 3, ¶5. From these crane related disclosures the Examiner summarily concludes, “Accordingly it would have been obvious to those skilled in the art to replace the V-shaped first boom (4) of the Soviet Union Patent (SU 887434) with the first boom (33, 34, 35) of the France Patent (FR 2,597,460) so that an operator effectively and independently could control the gantry.” Id. The Examiner summarily dismisses the disclosure of SU ‘434 wherein legs 3 and 6 are attached to a common support 7 configured to ride on rail 11 and a split leg 4 configured for operation upon an alternate rail. One of ordinary skill in the art would appreciate that providing independently operable and steerable mobile bases in a *rail operated gantry* crane not only would provide no appreciable benefit, but would present the additional undesirable effect that one or more of the associated base units would become otherwise dissociated with the generally linear orientation of the respective rails. That is, the gantry would be susceptible to derailment.

Further, one of ordinary skill in the art would readily appreciate that altering the articulated telescopic crane of FR ‘460 to include a triangular boom and beam configuration would unnecessarily complicate the construction and operation of the machinery transporting and handling device disclosed therein. That is, as shown in figs 7 and 8, positioning such a lifting device for removal of materials from flatbed vehicles would require positioning of the respective lift or boom legs on at least three adjacent

sides of the desired vehicle rather than the two-sided vehicle positioning shown therein. Furthermore, both SU '434 and FR '460 disclose lift devices having rigid horizontal beams. That is, the assemblies disclosed therein do not include extendable and retractable horizontal members.

Claim 1 further calls for, in part, a plurality of horizontal beams that functionally interconnect said lift legs and that are raiseable with coordinated lifting of the plurality of booms. Claim 1 further defines that at least one of the beams is linearly extendable to increase the horizontal spacing between two of said booms. The Examiner acknowledges that "a modified Soviet Union Patent (SU 887434) still does not show each of the booms is extendable and one of the beams (1, 8, 9) is linearly extendable to increase the spacing." April 20, 2007 Office Action, pg. 4, first paragraph. To overcome this shortcoming, the Examiner maintains that "the France Patent (FR 2420502) teaches a mobile gantry having an extendable boom (12, 13) and an extendable beam (6) so that the span of the gantry can be adjusted to suit any width of the track (see Figs. 2 and 3)." Id.

The Examiner further asserts that "Gonzales (3831791) also teaches a mobile lift having an extendable boom (44, 46, 50) and an extendable beam (20) to adjust the spacing and the height" and that "accordingly, it would have been obvious to those skilled in the art to modify the boom and the beam of the Soviet Union Patent (SU 887434) as taught by either the France patent (FR 2420502) or Gonzales (3831791) to be an extendable boom and the beam to be an extendable beam so that the modified gantry would be capable of lifting different sizes of loads at different locations." Id. Contrary to the Examiner's assertion, one of ordinary skill in the art would readily appreciate that the vertical movement of beams 6, 20 of FR 502 and Gonzalez, respectively, do not lift a

load from the ground as called for in claim 1 but merely configure the mobile gantry crane and carpet hoist for operation, respectively.

FR '502 discloses a mobile gantry crane having a tube that fits inside the central tube of a lower portion and can be adjusted for height by means of transverse bolts (12). FR '502 Abstract. FR '502 further discloses that the height adjustment enables the crane to be used on rails of different levels. Id., Fig. 3. It is apparent, i.e. common sense, that one of ordinary skill in the art would appreciate that this height adjustment needs to be performed while the gantry is before the gantry is loaded. The only alternative would be for to temporarily support the load on stationary supports while moving the bolt to adjust the height. This temporary supporting is known as "cribbing" in the art and is considered to be a time consuming and labor-intensive process which should be avoided, wherever possible. Hence, one of ordinary skill in the art would appreciate that the height of the gantry of FR '502 is adjusted prior to a lift rather than adjusted to perform the lift as specified in claim 1. Accordingly, as the combination of references fails to teach, suggest, or disclose each element as called for in claim 1, and the common sense combination of the disclosure of references similarly fails, Appellant believes the Examiner has failed to establish a prima facie rejection of claim 1.

The Examiners' combination of references that includes Gonzales suffers from a similar defect. Gonzales discloses that "the crossbar, carry bars, and the legs are telescoped for changing the height thereof." Gonzalez, abstract. That is, the position or length of legs 10 and 12 cannot be altered, nor are either of the legs raisable as called for in claim 1. Gonzales discloses a carpet hoist wherein support structures, i.e. carry bars 22 extend between the legs of the hoist and can be engaged therewith at various positions to

alter a supported position of a roll of carpet. Gonzalez, c. 2, ll. 19-35. Gonzales discloses a hoist wherein the legs include a series of square tubing members that are secured together with bolts or pins 52. Id., c. 3, ll. 14-22. Referring to Figs. 1 and 3, one of ordinary skill in the art would readily appreciate that the “booms” of the hoist of Gonzales are not extendable to lift a load in as much as the “booms” are secured together with bolts or pins 52 and the respective telescopic square tubing members include a single hole for this connection.

Appellant does not necessarily disagree that the assembly of Gonzales can be broken down or that Gonzales discloses a hoist configured to support a load at a variety of heights. However, claim 1 calls for a gantry crane having a plurality of horizontal beams that are raisable with coordinated lifting of first, second, and third booms to lift the load from the ground. None of the references cited by the Examiner, alone or in combination with any of the other art of record in this matter, discloses, teaches, or suggests a lifting device having such a configuration. Furthermore, there is no common sense variant of the combination of references cited by the Examiner which would yield the presently claimed invention.

Therefore, for the reasons set forth above, Appellant believes that which is called for in claim 1 is patentably distinct over the art of record. Therefore, Appellant requests favorable action over the rejection of claim 1.

## ii. CLAIM 2

The Examiner rejected claim 2 under 35 U.S.C. §103(a) U.S.C. §103(a) as being unpatentable over SU ‘434, in view of FR ‘460, and further in view of either of FR ‘502

or Gonzales for the same reasoning discussed above with respect to claim 1. April 20, 2007 Office Action, pg. 3, ¶5. Appellant respectfully disagrees.

Claim 2 calls for, in part, a triangulated mobile gantry crane that comprises first, second, and third booms, each of which has a vertical axis and comprises a mobile base that is independently supported on the ground and that is rotatable about a vertical axis to steer the crane. Claim 2 further defines each boom as including a lift leg that is supported on the base and is extendable along the vertical axis. As argued above with respect to claim 1, the art of record fails to teach, suggest, or disclose this configuration of booms and supports or even a common sense variant thereof. Claim 2 further calls for, in part, a plurality of horizontal beams that functionally interconnect the lift legs and that are raisable with coordinated lifting of the booms to lift the load from the ground. As supported above with respect to claim 1, the art of record, alone or in combination, fails to disclose, teach, or suggest to one having ordinary skill in the art, and the common sense associated therewith, to modify or otherwise combine these references to yield the claimed invention.

Claim 2 further defines that the first, second, and third beams functionally interconnect the upper ends of the lift legs to form an at least essentially triangular shape when viewed in top plan. One of ordinary skill in the art would readily appreciate that altering or otherwise modifying the disclosures of any of the assemblies of SU '434, FR '460, and FR '502 or Gonzales in the manner suggested by the Examiner would render a lifting device that is unstable and ill configured to lift a load in the manner enabled only by the pending claims.

Claim 2 further calls for rigging that extends downwardly from the beams and is detachably coupleable to a load after the gantry crane is transported to a position in which at least one of the beams is located over the load such that the rigging lifts the load from the ground upon subsequent extension of the booms and that is then releasable from the load upon subsequent retraction of the booms. None of the references of record disclose, teach, or suggest such a feature in as much as each of SU '434, FR '460, FR '502, and Gonzales disclose independently operable crane members 2, 5, 50, and 30, respectively. That is, these references disclose lifting assemblies wherein the configuration of the device is fixed and the crane member lifts and lowers the load independent of the relative configuration of the device. This underlying feature of the art of record cannot simply be ignored. There is no disclosure, teaching, or suggestion in the art of record that lifting be performed with rigging and corresponding extension and retraction of the booms as defined in claim 2. One of ordinary skill in the art would appreciate that the fixed or bolted or pinned connections of the devices of the art of record renders such an interpretation well beyond the reasonable and common sense appreciation of that which is disclosed in these references. Accordingly, Appellant believes claim 2 is also patentably distinct over the art of record and requests favorable action over the rejection thereof.

### iii. CLAIM 3

The Examiner rejected claim 3 under 35 U.S.C. §103(a) U.S.C. §103(a) as being unpatentable over SU '434, in view of FR '460, and further in view of either of FR '502 or Gonzales for the same reasoning discussed above with respect to claim 1. April 20, 2007 Office Action, pg. 3, ¶5. Appellant respectfully disagrees.

Claim 3 calls for, in part, first, second, and third booms each of which has a vertical axis and includes a mobile base that is independently supported on the ground and that is rotatable about the vertical axis. Claim 3 further recites a vertically expendable lift leg that is supported on the base and extendable along the vertical axis. Claim 3 further defines that the first boom is positioned laterally between and longitudinally remote from the second and third booms. Claim 3 further calls for, a plurality of horizontal beams that functionally interconnect the lift legs and wherein the beams include first, second, and third beams functionally interconnecting the upper ends of the lift legs to form and at least essentially triangular shape when viewed in top plan. None of the references cited by the Examiner can satisfy this series of limitations to form a triangular shape when viewed from above. The repeated square or rectangular configurations associated with the disclosure of the various references cannot be ignored. Those skilled in the art at the time of the invention clearly appreciated the stability afforded a gantry or other lifting device having four distinct points of support. Simply, the disclosure of the references cited by the Examiner teach away from providing a lifting assembly having the less stable association of triangular gantry.

Claimed 3 further calls for rigging that is detachably coupleable to the load after the gantry crane is transported to a position in which at least one of the beams is located over the load such that the rigging lifts the load from the ground upon subsequent extension of the booms and that is then releasable from the load upon subsequent retraction of the booms. As argued above with respect to claims 1 and 2, the art of record, and a commonsense interpretation thereof, fails to render obvious a gantry crane having such a triangular construction and operable in the manner claimed.

Claim 3 further calls for the first and second booms being extendable to increase the spacing between the first and second booms and the first and third booms, respectively. Of the references applied by the Examiner, only SU '434 and FR '460 have more than two booms as that term is used in the pending claims. There is no disclosure in SU '434 that the beams that interconnect the booms are extendable. In fact, as the gantry crane disclosed therein is operable on rail tracks (11), the common sense interpretation of that which is disclosed therein is that the respective beams are non-extendable because the distance between booms 3, 6 and 4 is fixed by the relative distance between tracks 10, 11. Furthermore, the mobile machinery of FR '460 is disclosed as including an articulated telescopic crane. FR '460, Abstract. The assembly disclosed therein does not include first and second beams that are extendable to increase the spacing between the first and second booms as defined by claim 3. That is, referring to Fig. 1 of FR '460, the mobile machinery (2) disclosed therein alters the distance between legs 12, 14 and 33 via rotation of beam 4 relative to beam 28. Although beam 4 is extendable, the relative position of legs 12, 14 does not change with respect to leg 33 as determined by the degree of extension of beam 4. That is, the distance between booms 12, 14 and 33 is independent of the relative extension or retraction of beam 4. As such, the references cited by the Examiner fail to teach, suggest, or disclose each and every element as called for in claim 3. Furthermore, in teaching rotation rather than extension to alter the distance between the respective booms, FR '460 teaches away from the claimed invention. The Examiner has simply attempted to yield the claimed invention from an amalgamation of marginally related references. In doing so, the Examiner has also discounted or wholly disregarded key features called for in the claims and not found



or suggested in the art of record. As such, at least for the reasons set forth above, Appellant believes claim 3 is patentably distinct over the art of record and respectfully requests favorable action over the rejections thereto.

**iv. Claim 4**

Claim 4 depends from claim 3 and further defines that which is called for therein. Although Appellant believes claim 4 is patentably distinct over the art of record at least pursuant to the chain of dependency, Appellant believes claim 4 recites additional features which further define the presently claimed invention over the art of record. Claim 4 further defines that each of the first and second beams comprises a telescopic tube assembly comprising at least one outer tube that is slidable over an inner tube. The Examiner rejected claim 4 for the same reasons set forth above with respect to claim 1 and further alleges that “figures 2 and 3 of the France Patent (FR 2420502) show one outer tube (6) slidable over at least one inner tube.”April 20, 2007 Office Action, pg. 4, first full paragraph. Appellant does not necessarily disagree that FR ‘502 discloses an extendable crossbeam (6), however, that is not all that is called for in claim 4.

Claim 4 further defines the gantry crane of claim 3 as including a first telescopic beam and a second telescopic beam through the use of each in claim 4. Although, FR ‘502 suggests a gantry crane having a single extendable beam (6), there is no teaching suggestion, or disclosure in the references of record for a gantry crane having more than one extendable horizontal beam as called for in claim 4. The multitude of references cited and applied by the Examiner further evidence the non-obvious nature of this feature. Specifically, in the April 20, 2007 Office Action, the Examiner applied nine references. Each of these references includes either no extendable horizontal beam or only one

extendable horizontal beam. There is no disclosure, teaching, suggestion in the art of record for a triangulated gantry crane having more than one telescopic horizontal beam as called for in claim 4. Furthermore, the Examiner has failed to provide any reasonable basis why one skilled in the art would manipulate or otherwise alter the rail supported gantry crane SU '434 with more one or even more than one adjustable beam other than to provide the wholly conclusionary statement "so that the modified gantry would be capable of lifting different sizes of loads at different locations." April 20, 2007 Office Action, pg. 4, first full paragraph. The references teach one adjustable beam for such an objective. Even so, as that which is called for in the claims is not shown, disclosed, taught, or suggested in the art of record, Appellant requests favorable action over the rejection of claim 4.

**v. Claim 5**

Claim 5 depends from claim 4 and further defines the gantry crane recited therein. Although Appellant believes claim 5 is also patentably distinct over the art of record at least pursuant to the chain of dependency, Appellant believes that which is called for in claim 5 is also independently distinguishable over the art of record.

Claim 5 further defines the gantry crane recited in claim 4 as including first and second beams that comprise a single inner tube positioned at least generally centrally of the beam and first and second outer tubes that extend from the inner tube to the lift leg of a respective boom. Claim 5 further recites that each of the outer tubes is extendable and retractable relative to the inner tube.

The Examiner rejected claim 5 under 35 U.S.C. §103(a) as being unpatentable over SU' 434 and FR '460 in view of either of FR '502 or Gonzalez as applied to claims

1-4 and further in view of Brower. The examiner asserts that Brower teaches “a horizontal beam (16) (Fig. 1) having a first outer tube and a second outer tube sliding over inner tube” and that therefore “it would have been obvious to those skilled in the art to provide a first outer tube and a second outer tube sliding over an inner tube on one of the booms of the Soviet Union Patent (SU 887434) as taught by Brower (4897011) to provide more flexibility to adjust spacing between the booms.” April 20, 2007 Office Action, pg. 5, ¶6. Appellant respectfully disagrees.

Yet again, the Examiner has merely asserted a conclusion as to the desirability of that which is called for in the claims. Claim 5 defines the gantry crane as including more than one extendable beam and wherein each extendable beam includes outer tubes constructed to extend between respective legs of the booms. That is, the inner portion of the tube association is specified as being inboard and the respective outer tube portions are specified as being positioned outboard relative to the inner tube of the beam. Even so, the Examiner’s interpretation that horizontal beam 16 of Brower is extendable is simply beyond the express disclosure of the reference. Specifically, Brower discloses an assembly wherein a number of tubular sections 36, 38 are joined together at right angles and configured to receive a support bar 16 which is held in place by a bolt 37. Brower, C. 2, ll. 37-47. One of ordinary skill in the art would readily appreciate that providing an extendable and retractable connection between bar 16 and coupling brackets 34 by the removal of bolts 37 would render the assembly of Brower unsuitable for its intended purpose in as much as the assembly would fall apart and support bar 16 would drop therefrom. Brower further discloses a jack mechanism 48 that engages respective gear tracks 32 and operatively engages respective frame sections 12, 14 and that support bars

16, 18 are raised as a result of the force applied to lifting arm 54 and coupling bar 44. Id., c. 2 lines 57 to 67. That is, the lifting arm 54 moves along frame sections 12, 14 in response to operation of jack 48. Simply, there is no disclosure in Brower that the assembly thereof provides extension and/or retraction of respective boom legs as called for in claim 5. The Examiners understanding of that which is disclosed in this reference is simply beyond a reasonable and common sense interpretation of that which has been shown as disclosed therein. Accordingly, as that which is called for in claim 5 is not disclosed, caught, or suggested in the art of record, Appellant believes claim 5 is independently distinguishable over the art of record. As such, Appellant requests favorable action over the rejection of claim five.

**vi. Claim 6**

Claim six further defines the gantry crane recited in claim 5 as further requiring that each of the first and second beams include a pair of cylinders, each of which is operable to extend and retract one of the outer tubes relative to the inner tube. Although Appellant believes claim 6 is in condition for allowance at least pursuant to the chain of dependency as depending from an otherwise allowable claim, Appellant believes claim 6 is independently distinguishable over the art of record.

The Examiner rejected claim 6 under 35 U.S.C. §103(a) as being unpatentable over SU '434 and FR '460 in view of either of FR '502 or Gonzalez and further in view of Brower as applied to claim 5 and further in view of Tana et al. (U.S. Patent 5,973,094). Yet again the Examiner has subverted the disclosure of a reference in a strained attempt to yield the claimed invention. This duplicative, five reference §103(a) rejection is

simply indicative of the Examiner's disregard of a reasonable and common sense requirements associated with claim interpretation.

Tana et al. is directed to a crane implement for hoisting and launching boats. Tana et al., title. Tana et al. expressly discloses an apparatus for hoisting boats which includes a frame 1 having a longitudinal beam 2, two cross beams 3 and 4, and a series of longitudinal beams 5, 6. Tana et al., c. 2, ll. 21-29, Fig. 2a. A carriage running along the central longitudinal beam is configured for hanging on the hook of a lifting crane or of a similar lifting machine. Id., ll. 42-46. That is, the device of Tana et al. is not a gantry crane but is the implement associated with and/or being operable with such crane devices. An extendable horizontal arm is driven by a hydraulic cylinder 9b, 9c for the pair of arms 3b, 3c; 4b, 4c, respectively. Each pair of extendable arms 3b, 3c, 4b, 4c is acted upon by means of a single mechanism or actuating cylinders 9b, 9c 10b, 10c. Id. Each parallel crossbeam 3 and 4 comprises an essentially tubular central member 3a, 4a meant to telescopically receive arms 3b, 3c, 4b, 4c. Id., c. 2, ll. 49-54. That is, the remote portions of the horizontal members are received in central member 3a, 4a via operation of cylinders 9b, 9c, 10b, 10c. There is no disclosure or suggestion in the references of record for an outer beam positioned outboard of an inner beam and that is independently extendable and retractable and required by claim 5. Furthermore, the unrelatedness of Tana et al. to the presently claimed invention further evidences the patentability of claim 6. Even further, the system of Tana et al. is simply incapable of the operation attributed thereto by the Examiner. That is, as arms 9b, 9c, 10b, 10c are located on an outer surface of inner tube 3a, 4a, one of ordinary skill in the art would appreciate that tubes 3b, 3c, 4b, 4c could not be configured to slide over tubes 3a, 4a without detrimentally affecting the

operation of the respective ram. Applicant's is the only disclosure in the art of record to whom this disclosure can be attributed. It is readily apparent that the Examiner's attribution of this claimed feature to the art of record is the result of impermissible hindsight reconstruction gleaned from Appellant's own disclosure. As the art of record and a common sense understanding thereof does not teach, suggest, or disclose a construction and operation as required by claim 6, Appellant respectfully requests favorable action over the rejection thereof.

**vii. CLAIM 7**

The Examiner rejected claim 7 under 35 U.S.C. §103(a) as being unpatentable over SU '434 and FR '460 in view of either of FR '502 or Gonzalez for the same reasons set forth above with respect to claim 1. Appellant respectfully disagrees.

Claim 7 calls for in part, a triangulated mobile gantry crane having first, second, and third booms that each have a vertical axis and comprise a mobile base that is independently supported on the ground and that is rotatable about the vertical axis to steer the crane. Each boom further includes a lift leg that is supported on the base and extendable along the vertical axis. As argued above with respect to claims 1-3, the references of record, alone or in combination, fail to teach, suggest, or disclose a triangulated gantry crane having first, second, and third booms as defined by clause A of claim 7.

Claim 7 further calls for a plurality of horizontal beams that interconnect said lift legs and form an at least essentially triangular shape when viewed in top plan. Claim 7 further calls for wherein the third beam is extendable to increase the spacing between the second and third booms. As argued above with respect to claim 3, no reasonable

combination of the references of record, or common sense understandings thereof, yields a triangulated mobile gantry crane having such a feature.

Claim 7 further recites rigging that is detachably coupleable to a load for lifting the load from the ground upon extension of the booms and being releasable from the load upon retraction of the booms. As argued about with respect to claims 1, 2, and 3, the Examiner's interpretation of that which is disclosed in the art of record is simply beyond a reasonable and common sense understanding of these references. One of ordinary skill in the art will readily appreciate that the systems of FR '502 and Gonzalez are simply incapable of the operation attributed to these references by the Examiner. Accordingly, as claim 7 includes at least three features that are not appreciable or attributable to the art of record or a common sense interpretation thereof, Appellant believes claim 7 is patently distinct thereover. Therefore, Appellant requests favorable action over the rejection of claim 7.

#### **viii. CLAIM 9**

The Examiner rejected claim 9 under 35 U.S.C. §103(a) as being unpatentable over SU '434 and FR '460 in view of either of FR '502 or Gonzalez for the same reasons set forth above with respect to claim 2. Claim 9 depends from claim 2 and further defines the triangulated mobile gantry crane of claim 2 wherein each of the first and second beams has multiple mounting points in the vicinity of the second and third booms, respectively, for selectively receiving an associated end of the third beam at one of a plurality of discrete mounting locations. An example of this construction is shown in Fig. 2 and referenced with numerals 110a, 110b, 110c. Although Appellant believes claim 9 is in condition for allowance at least pursuant to the chain of dependency as depending

from an otherwise allowable claim, Appellant believes claim 9 is also independently distinguishable over the art of record.

The Examiner maintains that “France Patent (FR 2420502) shows an extendable beam having a plurality of slots, which can be considered as mounting points, and Gonzalez (3,831,791) also shows an extendable beam having a plurality of apertures, which can be considered as mounting points, [sic].” April 20, 2007 Office Action, pg. 4, second full paragraph. Appellant does not necessarily disagree with the Examiner’s understanding of that which is disclosed in FR ‘502 and/or Gonzalez, however, that is not what is called for in claim 9.

Claim 9 further defines a triangulated mobile gantry crane, which includes three horizontal beams, wherein two of the beams include multiple mounting points and the third beam is selectively received by each of the two beams at one of a plurality of discrete mounting locations. That is, claim 9 defines the ability of the triangulated mobile gantry crane to provide a number of triangulated shapes. The references the Examiner relies on for this interpretation are simply adjustable single beam gantry crane assemblies. There is no disclosure in the references cited by the Examiner for 1) a triangulated gantry crane having more than one adjustable beam and 2) a third beam configured to engage first and second horizontal beams at a plurality of discrete locations as defined by claim 9. Accordingly, Appellant believes that which is called for in claim 9 is independently distinguishable over the art of record. Therefore, Appellant respectfully requests favorable action over the rejection of claim 9.



**ix. CLAIM 13**

The Examiner rejected claim 13 under 35 U.S.C. §103(a) as being unpatentable over SU '434 and FR '460 in view of either of FR '502 or Gonzalez for the same reasons set forth above with respect to claim 1 and further in view of Rulison. April 20, 2007 Office Action, pg. 6, ¶8. Appellant respectfully disagrees.

Claim 13 defines a triangulated mobile gantry crane having first, second, and third booms which extend in a vertical axis and each comprise a mobile base independently supported on the ground and a vertically expendable lift leg supported on the mobile base and extendable along the vertical axis. Claim 13 further calls for, in part, a rear crossbeam functionally interconnecting the lift legs of the second and third booms and wherein the first and second beams are raiseable with coordinated lifting of the first, second, and third booms to lift the load. Claim 13 further defines that at least one of the beams is linearly extendable to increase the horizontal spacing between two of said booms. Such a construction provides a variable configuration triangulated mobile gantry crane as disclosed only by the present application. The Examiner's amalgamation of references clearly evidences a picking and choosing of isolated disclosures of the cited prior art in an attempt to yield the presently claimed invention. Appellant finds it disingenuous to assert that a person of ordinary skill in the art would consider a carpet hoist as disclosed by Gonzalez or a construction material positioning apparatus as disclosed by Rulison to be material and relevant to gantry crane construction. Appellant finds it equally disingenuous to assert that that one of ordinary skill in the art would be motivated to alter the rail track supported gantry cranes of SU '434 and/or FR '502 to include independently supported and rotatable mobile base units as called for in the

present claims. The Examiner's interpretation that one of ordinary skill in the art would find it obvious and/or common sense to alter the construction of the gantry crane of SU '434 to include functionally interconnected lift legs and adjustable and linearly expendable horizontal beams as called for in claim 13 is equally unsupportable. Although not dispositive, the sheer number of references applied in addition to the alterations to the respective assemblies disclosed therein speaks volumes to the non-obvious nature of the presently claimed invention. Simply, the references of record, alone or in combination, fail to teach, suggest, or disclose, a mobile gantry having 1) an adjustable horizontal beam configuration and 2) lift leg booms configured to lift a load with associated rigging as called for in the present claims and defined by claim 13. Appellant finds it unreasonable to conclude that one of ordinary skill in the art equipped with the common sense aptitude associated therewith would combine the individual features as selected and modified by the Examiner from the plurality of references to yield the claimed invention absent Applicants disclosure thereof. Accordingly, Appellant believes that which is called for in claim 13 is patently distinct over the art of record and requests favorable action over the rejection thereof.

**x. CLAIM 14**

The Examiner rejected claim 14 under 35 U.S.C. §103(a) as being unpatentable over SU '434 and FR '460 in view of either of FR '502 or Gonzalez and in view of Brower and further in view of Rulison. April 20, 2007 Office Action, pg. 7, ¶9. Appellant respectfully disagrees.

Claim 14 calls for, in part, a triangulated mobile gantry crane having first and second horizontal lift beams functionally interconnecting lift legs of first and second booms and first and third booms, respectively. Claim 14 further calls for a rear horizontal crossbeam functionally interconnecting the lift legs of the second and third booms to one another. Claim 14 further defines that the first and second lift beams are extendable to increase the spacing between the first and second booms and the first and third booms, respectively. As argued above with respect to claims 1, 2, and 3, the art of record fails to provide any indication of the desirability or the operability of providing a gantry crane having a triangular configuration and including the features of extendability of the beams to alter the configuration of the booms relative to one another.

Claim 14 further defines that the first and second lift beams comprise a single inner tube positioned at least generally centrally of the beam, a first outer tube extending from said inner tube and a second outer tube extending from said inner tube such that the first and second outer tubes are extendable and retractable relative to the inner tube. As argued above with respect to claim 5, none of the references of record disclose or suggest a gantry crane having an extendable beam assembly wherein a pair of outer tubes cooperate with an inner tube. The Examiner's assertion that Brower teaches a horizontal beam (16) (Fig. 1) having a first outer tube and a second outer tube sliding over an inner tube and that "accordingly, it would have been obvious to those skilled in the art to provide a first outer tube and a second outer tube sliding over an inner tube on one of the booms of the Soviet Union Patent (SU 887434) as taught by Brower (4897011) to provide more flexibility to adjust the spacing between the booms" both disregards the

disclosure of Brower and disregards that portion of claim 14 related to this feature. April 20, 2007 Office Action, pg. 8, first paragraph.

Specifically, claim 14 specifies that the inner tubes and outer tubes are slidable relative to one another, i.e. extendable and retractable. One of ordinary skill in the art will readily appreciate from the disclosure of Brower that the mechanical lift device disclosed therein includes a number of “tubes” that are bolted or pinned together. That is, Appellant does not disagree that one tube engages another tube, however one of ordinary skill in the art and equipped with a modicum of common sense would appreciate that a bolted or pinned connection is not otherwise adjustable or configured for extension and retraction for lifting of a load as specified by claim 14.

Claim 14 further calls for rigging that is detachably coupleable to a load and configured for lifting the load from the ground upon extension of the booms and releasable from the load upon subsequent retraction of the booms. As argued above with respect to claims 1, 2, and 3, there is simply no disclosure or suggestion in the art of record to provide a gantry crane that is constructed to raise and lower a load via the interaction between a triangulated association of adjustable beams and operation of number of extendable booms. Accordingly, for each of the reasons above, Appellant believes that which is called for in claim 14 is patently distinct over the art of record. Therefore Appellant respectfully requests favorable action over the rejection thereof.

#### xi. CLAIM 16

The Examiner rejected claim 16 under 35 U.S.C. §103(a) as being unpatentable over SU ‘434 and FR ‘460 in view of either of FR ‘502 or Gonzalez for the same reasons

set forth above with respect to claim 1 and further in view of Rulison. April 20, 2007 Office Action, pg. 6, ¶8. Appellant respectfully disagrees.

Clause A of claim 16 is generally similar to clause A of claim 13. Accordingly, Appellant arguments offered above with respect to clause A of claim 13 are equally applicable to claim 16. Clause B of claim 16 are generally similar to clauses B and C of claim 14. Accordingly, the arguments offered above with respect to the patentability of claim 14 are also applicable to claim 16.

Claim 16 further defines the rear crossbeam as comprising a hydraulic cylinder extending between the first and second lift beams and operatively connectable to each of the first and second lift beams at multiple discrete mounting locations. That is, a triangulated mobile gantry crane includes a horizontal beam that extends between another of the two horizontal beams and is operatively connectable to each horizontal beam at multiple discrete locations. The Examiner summarily concludes that “it also would have been obvious to those skilled in the art to provide a pair of cylinders on the beams of Soviet Union Patent (SU 887434) conveniently to [sic] extend or retract the beams.” April 20, 2007 Office Action, pg. 7, first paragraph. The Examiner has provided no support for such an assertion, nor can one be found in the art of record. Simply, there is no disclosure or suggestion in the references of record to provide a hydraulic cylinder that extends between a pair of horizontal beams and is connectable to each of a pair of beams at multiple discrete locations. Particularly, as SU ‘434 discloses 1) a rail supported gantry having 2) a number of fixed length vertical and horizontal beams and 3) the vertical legs are configured to be collectively supported on generally opposite ends of the horizontal beams, Appellant believes such an assertion and conclusion is simply

unsupportable. Accordingly, Appellant requests favorable action over the rejection of claim 16.

**xii. CLAIM 17**

The Examiner rejected claim 17 under 35 U.S.C. §103(a) as being unpatentable over SU '434, in view of FR '460, and further in view of either of FR '502 or Gonzales. April 20, 2007 Office Action, pg. 3, ¶5. Appellant respectfully disagrees.

Claim 17 defines a method that includes moving a mobile triangulated gantry crane over a load by straddling the load with an open from into the gantry crane and positioning the load between an open front end and a closed rear end of the triangulated gantry. There is no disclosure in the art of record of a gantry crane operable in such a manner. Claim 17 further defines that the mobile triangulated gantry crane includes first, second, and third booms extending along a respective vertical axis and oriented by a plurality of horizontal lines in the form of an acute triangle. The method further defines extending the booms along the vertical axis in a coordinated manner to raise the horizontal beams and to lift the load and horizontally extending at least one of the beams to increase the horizontal spacing between two of the booms.

In rejecting claim 17 the Examiner asserts "a modified Soviet Union Patent (SU 87434) shows mobile gantry having a triangular mobile gantry crane and method to lift the load, comprising first (4), second (3), and third booms (6), each of which having a mobile base that is independently support [sic] on the ground and a vertically [sic] left leg (Fig. 2) supported on the base..." April 20, 2007 Office Action, pg. 5, first paragraph. Contrary to the Examiner's interpretation, SU '434 clearly discloses a rail supported gantry wherein opposite vertical legs are collectively supported on a horizontal beam 7

positioned above rails 10, 11. The Examiner further maintains that “it would have been obvious to those skilled in the art would [sic] retract the booms of the France Patent (FR 2420502) to lower the load.” *Id.* The Examiner’s conclusion would require support for an obvious and common sense interpretation that one of ordinary skill in the art would appreciate that the bolt or pins associated with the vertical adjustment of the gantry crane of FR ‘502 could be removed such that the horizontal beam 6 could be raised and lowered with the load supported thereby. Such an assertion is simply absurd. As such, Appellant believes that which is called for in claim 17 is patently distinct over the art of record and requests favorable action over the Examiner’s rejection thereof.

### xiii. CLAIM 18

The Examiner rejected claim 18 under 35 U.S.C. §103(a) under 35 U.S.C. §103(a) as being unpatentable over SU ‘434, in view of FR ‘460, and further in view of either of FR ‘502 or Gonzales for the same reasons set forth above with respect to claim 17. April 20, 2007 Office Action, pg. 5, first paragraph. Appellant respectfully disagrees.

Claim 18 recites moving, coupling, and extending steps generally similar to those called for in claim 17. Accordingly, in as much as the references of record fail to otherwise disclose, teach, or suggest such features, Appellant believes claim 18 is patently distinct thereover. Claim 18 further specifies extending a third beam prior to moving a triangulated gantry crane over a load so as to increase spacing between second and third booms sufficiently to permit a rear end of the gantry crane to straddle the load. The Examiner’s interpretation of the art of record disregards a geometric principle associated with loading of a crane having a triangular configuration as well as the

portions of that which is called for in the present claims. That is, one of ordinary skill in the art would appreciate that modifying the references as suggested by the Examiner would yield an assembly wherein the center of gravity of a load is positioned outside the points of support of the crane relative to the orientation of the lift legs.

The Examiner maintains that “it would have been obvious to those skilled in the art would [sic] linearly extends [sic] one of the beams of the France Patent (FR 2420502) to provide a wider spacing for loading.” *Id.* Appellant does not necessarily disagree that FR ‘502 discloses an adjustable span and height gantry crane however, that is not what is called for in the present claims. The gantry crane of SU ‘434 includes opposite legs that are supported on horizontal beams 7 which include rail wheels at generally opposite ends thereof. The positioning of crane unit 2 on horizontal member 1, in addition to the split configuration of vertical leg 4, ensures that a load set upon gantry 1 is positioned within the footprint of the crane supports. Of the multiple references cited by the Examiner, only FR ‘460 discloses a three-point supported crane assembly. The assembly disclose therein is loaded in a cantilevered fashion via crane unit I such that the load is loaded beyond the footprint of wheels 10, 11, 35. There is simply no disclosure in the art of record for extending a third beam of a triangulated gantry crane so as to increase the spacing between second and third booms to permit a rear end of the gantry crane to straddle a load. The various lifting devices of the remaining references applied by the Examiner include either a single beam and/or four distinct support points such that the loading of the lift device takes place within the footprint of the respective supports. Accordingly, there is no need or desire disclosed in the references of record for extending a third beam prior to moving a triangulated gantry crane so as to increase spacing



between respective booms to permit a rear end of the gantry crane to saddle a load as defined by claim 18. Accordingly, Appellant believes that which is called for in claim 18 is patently distinct over the art of record and requests favorable action over the rejection thereof.

**xiv. CLAIM 21**

The Examiner rejected claim 21 under 35 U.S.C. §103(a) as being unpatentable over SU '434, in view of FR '460, and further in view of either of FR '502 or Gonzales for the same reasons stated above with respect to claim 1. April 20, 2007 Office Action, pg. 3, ¶5. Appellant respectfully disagrees.

Claim 21 defines a mobile triangulated gantry having a boom and beam assembly generally similar to that defined in claims 1, 2, and 3. As argued above with respect to at least these claims, Appellant believes the Examiner has failed to establish a *prima facie* obviousness rejection of the these claims.

Claim 21 further calls for rigging that extends downwardly from the beams and is detachably coupleable to a load after the gantry crane is transported to a position in which the rigging extends downwardly from the beams and is detachably coupleable to a load after the gantry crane is transported to a position in which at least one of the beams is located over the load. Claim 21 further defines the rigging as raising the load from the ground upon extension of the booms and being releasable from the load upon retraction of the booms. Appellant believes the Examiner has failed to establish the obvious and common sense combination of these features from the art of record for the same reasons offered above with respect to claims 1, 2, and 3. The multiple references cited by the Examiner disclose crane units connected to the support members to raise and lower a load

or extendable rams configured to alter the position of one member relative to another, as disclosed in Rulison. The art of record simply fails to teach, suggest, or disclose to one of ordinary skill in the art and the aptitude associated therewith the raising and/or lowering of a load with a gantry crane via extension and retraction of boom legs oriented in a triangle as defined by the present claims.

As argued above with respect to at least claims 1, 2, and 3, Appellant believes that an obviousness rejection of these claims features cannot be substantiated with respect to these references. Simply, the references of record lack the disclosure necessary to conclude that one of ordinary skill in the art having this combination of references in front of them would glean the claimed invention therefrom. There is simply no support for the conclusion that the Examiner's picking and choosing of isolated elements from these references is anything more than impermissible hindsight. Furthermore, the conclusions and rejections proffered by the Examiner fail to address claim limitations and the interaction therebetween as specified in the claims as pointed out herein. As such, Appellant believes that which is called for in claim 21 is patentably distinct over the art of record. Therefore, Appellant requests favorable action over the rejection of claim 21.


### **CONCLUSION**

In view of the above remarks, Appellant respectfully submits that the Examiner has provided no supportable position that claims 1-23 are not patentable. Appellant believes that each claim is clear and definite, and defines the present invention over the art of record. Accordingly, rather than simply returning this matter for further prosecution before the Examiner, Appellant respectfully requests that the Board direct passage of the present application to issuance.

**General Authorization for Extension of Time**

In accordance with 37 C.F.R. §1.136, Appellant hereby provides a general authorization to treat this and any future reply requiring an extension of time as incorporating a request therefore. The Office is hereby authorized to charge Deposit Account No. 50-1170 the amount of \$315.00 associated with the \$255.00 fee for filing this Appeal Brief under 37 C.F.R. §1.17(c) and the \$60.00 fee for a one-month extension of time. The Office is further authorized to charge any fee deficiency, or credit any overpayment, to Deposit Account No. 50-1170.

Respectfully submitted,



Timothy E. Newholm  
Registration No. 34,400

Dated: October 22, 2007  
Attorney Docket No.: 1266.015

**P.O. ADDRESS:**  
Boyle Fredrickson, S.C.  
840 North Plankinton Avenue  
Milwaukee, WI 53203  
414-225-9753

Email: [docketing@boylefred.com](mailto:docketing@boylefred.com)

**CLAIMS APPENDIX**

1. (Previously Presented) A triangulated mobile gantry crane, comprising:

(A) first, second, and third booms, each of which has a vertical axis and comprises 1) a mobile base that is independently supported on the ground, that is rotatable about the vertical axis to steer the crane and 2) a lift leg that is extendible about the vertical axis, that is supported on said base, and that has an upper end, said first boom being positioned laterally between and longitudinally remote from said second and third booms, wherein first, second, and third horizontal lines interconnecting said first, second, and third booms form an acute triangle;

(B) a plurality of horizontal beams that functionally interconnect said lift legs and that are raisable with coordinated lifting of said first, second, and third booms to lift a load from the ground, and wherein at least one of the beams is linearly extendible to increase the horizontal spacing between two of said booms;

(C) rigging that extends downwardly from the beams and that is detachably coupleable to the load after the gantry crane is transported to a position in which at least one of the beams is located over the load, the rigging lifting the load from the ground upon subsequent extension of said booms and that then being releasable from the load upon subsequent retraction of the said booms.

2. (Previously Presented) A triangulated mobile gantry crane comprising:

(A) first, second, and third booms, each of which has a vertical axis and comprises 1) a mobile base that is independently supported on the ground and that is rotatable about the vertical axis to steer the crane, and 2) a lift leg that is supported on

said base, that is extendible along the vertical axis, and that has an upper end, said first boom being positioned laterally between and longitudinally remote from said second and third booms;

(B) a plurality of horizontal beams that functionally interconnect said lift legs and that are raisable with coordinated lifting of said first, second, and third booms to lift a load from the ground, and wherein at least one of the beams is linearly extendible to increase the horizontal spacing between two of said booms, and wherein said beams include first, second, and third beams functionally interconnecting said upper ends of said lift legs to form an at least essentially triangular shape when viewed in top plan;

(C) rigging that extends downwardly from the beams and that is detachably coupleable to a load after the gantry crane is transported to a position in which at least one of the beams is located over the load, the rigging lifting the load from the ground upon subsequent extension of said booms and that then being releasable from the load upon subsequent retraction of the said booms.

3. (Previously Presented) A triangulated mobile gantry crane comprising:

(A) first, second, and third booms, each of which has a vertical axis and comprises 1) a mobile base that is independently supported on the ground and that is rotatable about the vertical axis to steer the crane and 2) a vertically extendible lift leg that is supported on said base, that is extendible along the vertical axis, and that has an upper end, said first boom being positioned laterally between and longitudinally remote from said second and third booms;

(B) a plurality of horizontal beams that functionally interconnect said lift legs, wherein said beams include first, second, and third beams functionally interconnecting said upper ends of said lift legs to form an at least essentially triangular shape when viewed in top plan, and wherein said first and second beams are extendible to increase the spacing between said first and second booms and said first and third booms, respectively; and

(C) rigging that extends downwardly from the beams and that is detachably coupleable to the load after the gantry crane is transported to a position in which at least one of the beams is located over the load, the rigging lifting the load from the ground upon subsequent extension of said booms and that then being releasable from the load upon subsequent retraction of the said booms.

4. (Previously Presented) The gantry crane as recited in claim 3, wherein each of said first and second beams comprises a telescoping tube assembly comprising at least one inner tube and at least one outer tube slidable over the inner tube.

5. (Previously Presented) The gantry crane as recited in claim 4, where each of said first and second beams comprises a single inner tube positioned at least generally centrally of said beam, a first outer tube extending from said inner tube to the lift leg of said first boom, and a second outer tube extending from said inner tube to the lift leg of the associated one of said second and third booms, each of said outer tubes being extendible and retractable relative to said inner tube.

6. (Previously Presented) The gantry crane as recited in claim 5, wherein each of said first and second beams further comprises a pair of cylinders, each of which is operable to extend and retract one of said outer tubes relative to said inner tube.

7. (Previously Presented) A triangulated mobile gantry crane comprising:

(A) first, second, and third booms, each of which has a vertical axis and comprises 1) a mobile base that is independently supported on the ground and that is rotatable about the vertical axis to steer the crane and 2) a lift leg that is supported on said base, that is extendible along the vertical axis, and that has an upper end, said first boom being positioned laterally between and longitudinally remote from said second and third booms; and

(B) a plurality of horizontal beams that functionally interconnect said lift legs, wherein said beams include first, second, and third beams functionally interconnecting said upper ends of said lift legs to form an at least essentially triangular shape when viewed in top plan, and wherein said third beam is extendible to increase the spacing between said second and third booms; and

(C) rigging that extends downwardly from the beams and that is detachably coupleable to a load after the gantry crane is transported to a position in which at least one of the beams is located over the load, the rigging lifting the load from the ground upon subsequent extension of said booms and that then being releasable from the load upon subsequent retraction of the said booms.

8. (Previously Presented) The gantry crane as recited in claim 7, wherein said third beam comprises a hydraulic cylinder extending between said first and second beams.

9. (Previously Presented) The gantry crane as recited in claim 2, wherein each of said first and second beams has multiple mounting points in the vicinity of said second and third booms, respectively, for selectively receiving an associated end of said third beam at one of a plurality of discrete mounting locations.

10. (Previously Presented) The gantry crane as recited in claim 1, wherein said first boom comprises a front boom located adjacent a lateral centerline of said gantry crane and said second and third booms are rear booms located on opposite sides of said lateral centerline.

11. (Previously Presented) The gantry crane as recited in claim 1, wherein each of said mobile bases comprises a wheel.

12. (Previously Presented) The gantry crane as recited in claim 1, wherein each of said bases is rotatable about the associated vertical axis through an angle of 360 ° relative to the associated lift leg.

13. (Previously Presented) A triangulated mobile gantry crane, comprising:

(A) first, second, and third booms, each of which extends along a vertical axis and comprises 1) a mobile base that is independently supported on the ground and 2) a



vertically extendible lift leg that is supported on said base, that is extendible along the vertical axis, and that has an upper end, said mobile base being rotatable about the vertical axis through an angle of at least 360° with respect to said lift leg to steer said gantry crane, wherein

(1) said first boom is a front boom positioned at a lateral centerline of said gantry crane;

(2) said second and third booms are rear booms positioned on opposite sides of said lateral centerline;

(3) first, second, and third horizontal lines interconnecting said first, second, and third booms form an acute triangle;

(B) first and second lift beams functionally interconnecting the lift legs of said first and second booms and said first and third booms, respectively;

(C) a rear cross beam functionally interconnecting the lift legs said second and third booms to one another, wherein the first and second lift beams are raisable with coordinated lifting of said first, second, and third booms to lift a load, and wherein at least one of the beams is linearly extendible to increase the horizontal spacing between two of said booms; and

(D) rigging that extends downwardly from the lift beams and that is detachably coupleable to a load after the gantry crane is transported to a position in which at least one of the beams is located over the load, the rigging lifting the load from the ground upon subsequent extension of said booms and that then being releasable from the load upon subsequent retraction of the said booms, the rigging comprising at least one of straps, chains, and cables.

14. (Previously Presented) A triangulated mobile gantry crane, comprising:

(A) first, second, and third booms, each of which extend along a vertical axis and comprises 1) a mobile base and 2) a lift leg that is supported on said base, that is extendible along the vertical axis, and that has an upper end, said mobile base being rotatable about the vertical axis through an angle of at least  $360^\circ$  with respect to said lift leg to steer said gantry crane, wherein

(1) said first boom is a front boom positioned at a lateral centerline of said gantry crane;

(2) said second and third booms are rear booms positioned on opposite sides of said lateral centerline;

(3) first, second, and third horizontal lines interconnecting said first, second, and third booms form an acute triangle;

(B) first and second horizontal lift beams functionally interconnecting the lift legs of said first and second booms and said first and third booms, respectively;

(C) a rear horizontal cross beam functionally interconnecting the lift legs of said second and third booms to one another, wherein

said first and second lift beams are extendible to increase the spacing between said first and second booms and said first and third booms, respectively, wherein each of said first and second lift beams comprises a single inner tube positioned at least generally centrally of said beam, a first outer tube extending from said inner tube to the lift leg of said first boom, and a second outer tube extending from said inner tube to the lift leg of the associated one of said second and third booms, each of said outer tubes being extendible and retractable relative to said inner tube; and

(D) rigging that extends downwardly from the lift beams and that is detachably coupleable to a load after the gantry crane is transported to a position in which at least one of the lift beams is located over the load, the rigging lifting the load from the ground upon subsequent extension of said booms and that then being releasable from the load upon subsequent retraction of the said booms, the rigging comprising at least one of straps, chains, and cables.

15. (Previously Presented) The gantry crane as recited in claim 14, wherein each of said first and second lift beams further comprises a pair of cylinders, each of which is operable to extend and retract one of said outer tubes relative to said inner tube.

16. (Previously Presented) A triangulated mobile gantry crane comprising:

(A) first, second, and third booms, each of which extends along a vertical axis and comprises 1) a mobile base and 2) a vertically extendible lift leg that is supported on said base, that is extendible along the vertical axis, and that has an upper end, said mobile base being rotatable the vertical axis through an angle of at least 360 ° with respect to said lift leg to steer said gantry crane, wherein

(1) said first boom is a front boom positioned at a lateral centerline of said gantry crane;

(2) said second and third booms are rear booms positioned on opposite sides of said lateral centerline;

(3) first, second, and third horizontal lines interconnecting said first, second, and third booms form an acute triangle;

(B) first and second horizontal lift beams functionally interconnecting the lift legs of said first and second booms and said first and third booms, respectively;

(C) a rear horizontal cross beam functionally interconnecting the lift legs said second and third booms to one another, wherein said rear cross beam comprises a hydraulic cylinder extending between said first and second lift beams and operatively connectable to each of said first and second lift beams at multiple discrete mounting locations; and

(D) rigging that extends downwardly from the lift beams and that is detachably coupleable to a load after the gantry crane is transported to a position in which at least one of the beams is located over the load, the rigging lifting the load from the ground upon subsequent extension of said booms and that then being releasable from the load upon subsequent retraction of the said booms.

17. (Previously Presented) A method comprising;

(A) moving a mobile triangulated gantry crane over a load by straddling said load with an open front end of said gantry crane and positioning said load longitudinally between said open front end and a closed rear end, said rear end of said gantry crane comprising a first boom positioned laterally between and longitudinally remote from second and third booms, each of the booms extending along a respective vertical axis, wherein first, second, and third horizontal lines interconnecting said first, second, and third booms form an acute triangle; then

(B) coupling at least one of first, second, and third horizontal beams to said load, said first, second, and third horizontal beams functionally interconnecting said first, second, and third booms to one another; then

(C) extending said first, second, and third booms along the respective vertical axes in a coordinated manner to raise said first, second, and third horizontal beams and to lift said load; and

(D) linearly horizontally extending at least one of said beams to increase the horizontal spacing between two of the booms.

18. (Previously Presented) A method comprising;

(A) moving a mobile triangulated gantry crane over a load by straddling said load with an open front end of said gantry crane and positioning said load longitudinally between said open front end and a closed rear end, said rear end of said gantry crane comprising a first boom positioned laterally between and longitudinally remote from second and third booms, wherein each of the booms extends along a respective vertical axis and, and wherein first, second, and third horizontal lines interconnecting said first, second, and third booms form an acute triangle rotatable; then

(B) coupling at least one of first, second, and third horizontal beams to said load, said first, second, and third horizontal beams functionally interconnecting said first, second, and third booms to one another; then

(C) extending said first, second, and third booms along the respective vertical axes to lift said load; and

(D) extending said third beam prior to said moving step so as to increase the spacing between said second and third booms sufficiently to permit a rear end of said gantry crane to straddle said load.

19. (Previously Presented) The method as recited in claim 18, further comprising extending said first and second beams to increase the length of said gantry crane.

20. (Currently Amended) The method as recited in claim 17, wherein each of said booms includes a base and a lift leg mounted on said base, and further comprising steering said gantry crane vehicle by rotating the base of at least one of said booms about the respective vertical axis through an angle of at least 360° with respect to the associated lift leg.

21. (Previously Presented) A triangulated mobile gantry crane comprising:

(A) a boom assembly consisting of first, second, and third horizontally spaced booms, each of which extends along a vertical axis and comprises 1) a mobile base that is independently supported on the ground and 2) a lift leg that is supported on said base, that is extendible along the vertical axis, and that has an upper end, said first boom being positioned laterally between and longitudinally remote from said second and third booms;

(B) a plurality of horizontal beams that functionally interconnect said lift legs and that are raisable with coordinated lifting of said first, second, and third booms to lift a load, and wherein at least one of the beams is linearly extendible to increase the horizontal spacing between two of said booms; and

(C) rigging that extends downwardly from the beams and that is detachably coupleable to a load after the gantry crane is transported to a position in which at least one of the beams is located over the load, the rigging lifting the load from the ground upon subsequent extension of said booms and that then being releasable from the load upon subsequent retraction of the said booms.

22. (Previously Presented) The method of claim 17, wherein the coupling step is performed using rigging suspended from the at least one beam, and further comprising

while said booms are extended, moving said gantry crane to transport the load; then

retracting said first, second, and third booms about the respective vertical axes to lower the load onto the ground; and then

releasing said rigging to decouple said at least one of said first, second, and third horizontal beams from the load.

23. (Previously Presented) The method of claim 18, wherein the coupling step is performed using rigging suspended from the at least one beam, and further comprising:

while said booms are extended, moving said gantry crane to transport the load; then

retracting said first, second, and third booms about the respective vertical axes to lower the load onto the ground; and then

releasing said rigging to decouple said at least one of said first, second, and third horizontal beams from the load.

## **EVIDENCE APPENDIX**

None



Roger L. Johnston

U.S. Serial No. 10/080,982

**RELATED PROCEEDINGS APPENDIX**

None